

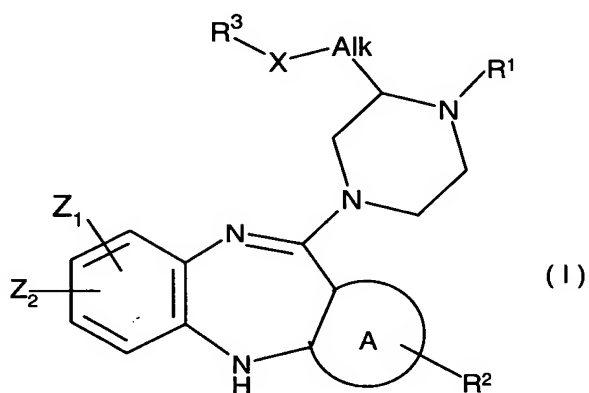
Amendments to the Claims

Please cancel claims 9-11, 14-20, 23-26, 29, 52-60, 65-72 and 77-84.

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A compound of formula (I):



wherein:



is an optionally benzo-fused five or six member aromatic ring having zero to three hetero atoms independently selected from N, S, and O;

Alk is (C₁₋₄) alkylene or hydroxy substituted (C₁₋₄) alkylene;

X is oxygen or sulfur;

R¹ is hydrogen, (C₁₋₆) fluoroalkyl, (C₃₋₆) cycloalkyl, or (C₁₋₄) alkyl, wherein the (C₁₋₄) alkyl is unsubstituted or substituted with hydroxy, methoxy, ethoxy, OCH₂CH₂OH, or -CN;

R² is H, halogen, (C₁₋₆) fluoroalkyl, (C₃₋₆) cycloalkyl, OR⁴, SR⁴, NO₂, CN, COR⁴, C(O)OR⁴, CONR⁵R⁶, NR⁵R⁶, SO₂NR⁵R⁶, NR⁵COR⁴, NR⁵SO₂R⁴, optionally substituted aromatic, or (C₁₋₆) alkyl, wherein the (C₁₋₆) alkyl is unsubstituted or substituted with hydroxy;

R³ is hydrogen, (C₁₋₄) alkyl, (C₃₋₆) cycloalkyl, (C₂₋₆) alkenyl, Ar, or (C₁₋₄) alkyl-Ar;

R⁴ is hydrogen, (C₁₋₆) alkyl, (C₁₋₆) fluoroalkyl, or optionally substituted aromatic;

R^5 and R^6 are independently hydrogen, (C_{1-6}) alkyl, or optionally substituted aromatic,

R^7 is hydrogen, (C_{1-6}) alkyl, (C_{1-6}) fluoroalkyl, or optionally substituted aromatic;

R^8 and R^9 are independently hydrogen, (C_{1-6}) alkyl, or optionally substituted aromatic;

Ar is optionally substituted phenyl, naphthyl, monocyclic heteroaromatic or bicyclic heteroaromatic;

Z^1 and Z^2 are independently selected from hydrogen, halogen, (C_{1-6}) alkyl, (C_{1-6}) fluoroalkyl, OR^7 , SR^7 , NO_2 , CN, COR^7 , $CONR^8R^9$, NR^8R^9 , and optionally substituted aromatic;

and all salts, solvates, optical and geometric isomers, and crystalline forms thereof.

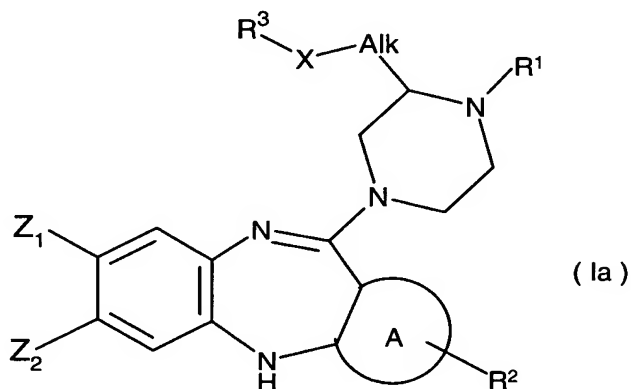
Claim 2 (original): The compound of claim 1, wherein:

R^1 is hydrogen or (C_{1-4}) alkyl unsubstituted or substituted with hydroxy, methoxy, ethoxy, $-OCH_2CH_2OH$, or $-CN$;

R^2 is H, (C_{1-6}) alkyl, halogen, (C_{1-6}) fluoroalkyl, $-OR^4$, $-SR^4$, $-NO_2$, $-CN$, $-COR^4$, $-C(O)OR^4$, $-CONR^5R^6$, $-NR^5R^6$, $-SO_2NR^5R^6$, $-NR^5COR^4$, $-NR^5SO_2R^4$, or optionally substituted aromatic;. and

R^3 is hydrogen, (C_{1-4}) alkyl, Ar, or (C_{1-4}) alkyl-Ar

Claim 3 (original): The compound of claim 1 of formula (Ia):



wherein:

Alk is (C_{1-4}) alkylene;

R^2 is H, halogen, (C_{1-6}) fluoroalkyl, (C_{3-6}) cycloalkyl, $-OR^4$, $-SR^4$, $-NO_2$, $-CN$, $-COR^4$, $-C(O)OR^4$, $-CONR^5R^6$, phenyl, or (C_{1-6}) alkyl, wherein the (C_{1-6}) alkyl is unsubstituted or substituted with a hydroxyl group;

R^3 is hydrogen, (C_{1-6}) fluoroalkyl, (C_{2-6}) alkenyl, phenyl, or (C_{1-4}) alkyl wherein (C_{1-4}) alkyl is unsubstituted or substituted with a phenyl group;

R^4 is hydrogen, (C_{1-6}) alkyl, or (C_{1-6}) fluoroalkyl;

R^5 and R^6 are independently hydrogen or (C_{1-6}) alkyl;

R^7 is hydrogen, (C_{1-6}) alkyl, or (C_{1-6}) fluoroalkyl;

Z^1 and Z^2 are independently selected from hydrogen, halogen, (C_{1-6}) alkyl, (C_{1-6}) fluoroalkyl, $-OR^7$, $-SR^7$, $-NO_2$, $-CN$, and $-COR^7$; and

phenyl is unsubstituted or substituted with one to three substituents independently selected from hydrogen, halogen, (C_{1-6}) alkyl, (C_{1-6}) fluoroalkyl, $-OH$, (C_{1-6}) alkoxy, (C_{1-6}) fluoroalkoxy, (C_{1-6}) alkylthio, (C_{1-6}) acyl, (C_{1-4}) alkylsulfonyl, $-OCF_3$, $-NO_2$, $-CN$, carboxamido which may be substituted on the nitrogen by one or two (C_{1-4}) alkyl groups, and $-NH_2$ in which one of the hydrogens may be replaced by a (C_{1-4}) alkyl group and the other hydrogen may be replaced by either a (C_{1-4}) alkyl group, a (C_{1-6}) acyl group, or a (C_{1-4}) alkylsulfonyl group.

Claim 4 (original): The compound of claim 3, wherein:

R^1 is hydrogen, (C_{1-6}) fluoroalkyl, (C_{3-6}) cycloalkyl or (C_{1-4}) alkyl, wherein the (C_{1-4}) alkyl is unsubstituted or substituted with hydroxy, methoxy or $-OCH_2CH_2OH$;

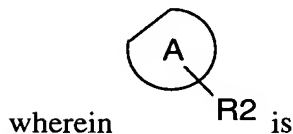
R^2 is H, (C_{1-6}) fluoroalkyl, (C_{3-6}) cycloalkyl, $-C(O)OR^4$, or (C_{1-6}) alkyl, wherein the (C_{1-6}) alkyl is unsubstituted or substituted with a hydroxyl group;

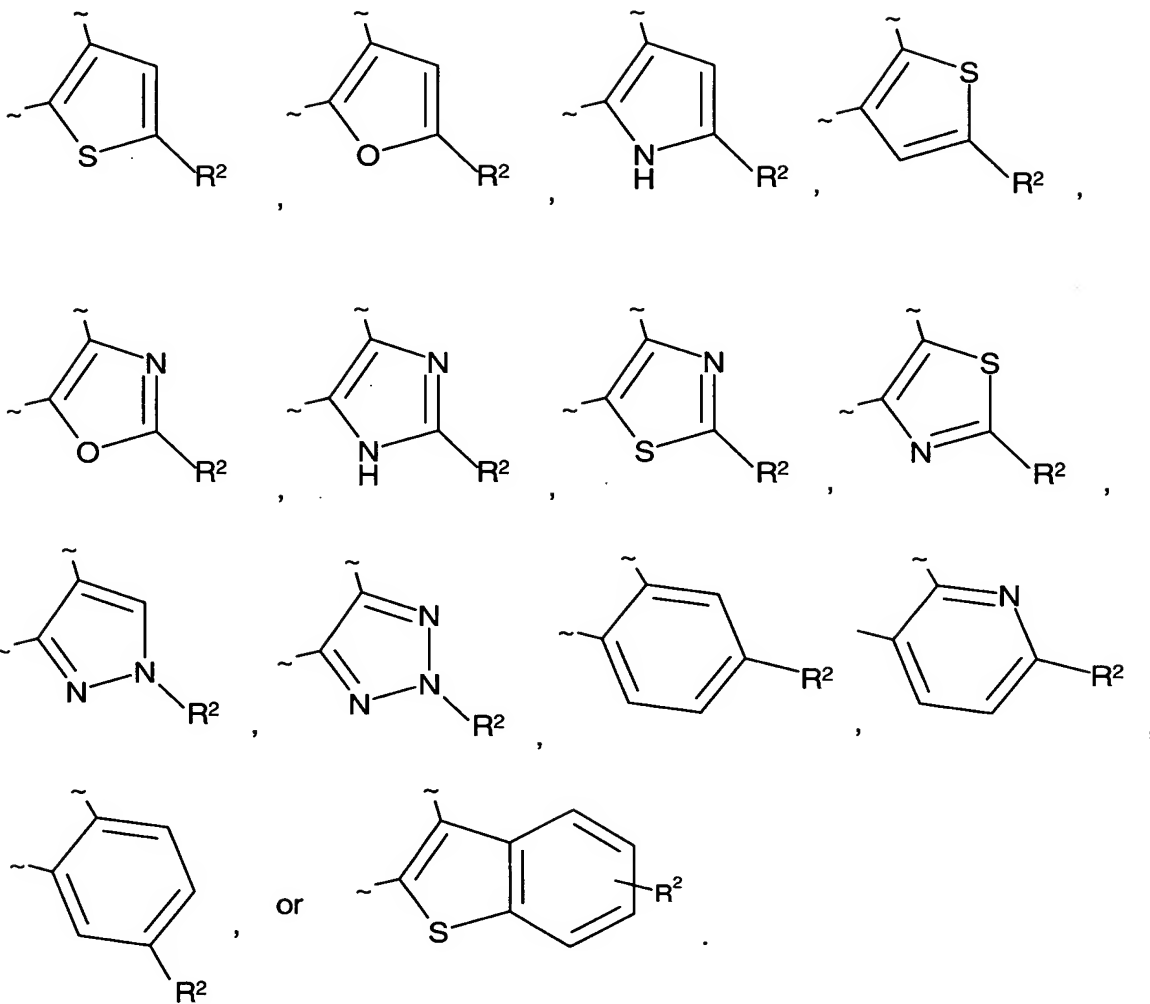
R^3 is hydrogen, (C_{1-4}) alkyl, or (C_{2-6}) alkenyl, wherein (C_{1-4}) alkyl is unsubstituted or substituted with a phenyl group;

R^4 is hydrogen or (C_{1-6}) alkyl; and

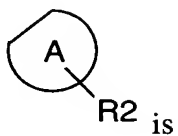
Z^1 and Z^2 are independently selected from hydrogen, halogen, (C_{1-6}) alkyl and (C_{1-6}) fluoroalkyl.

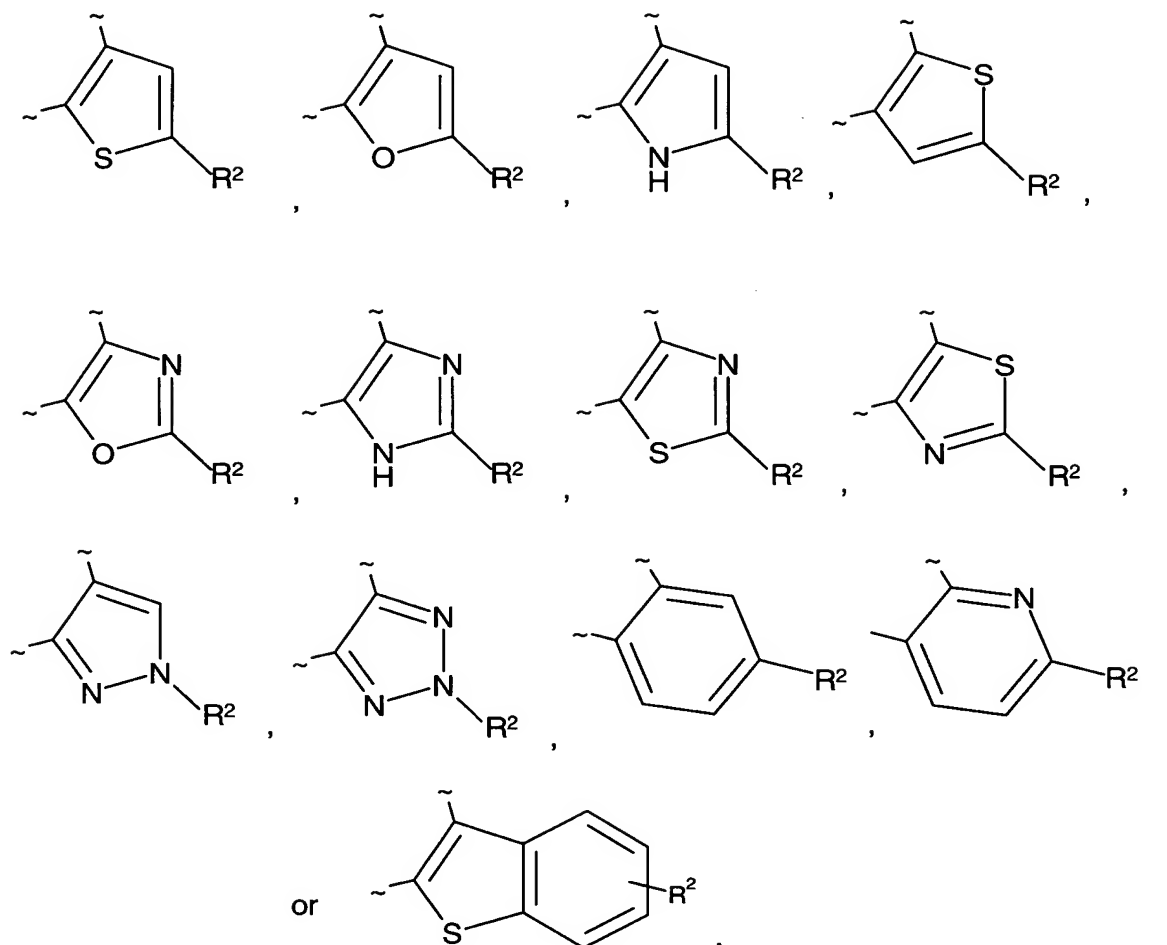
Claim 5 (currently amended): The compound of ~~any one of claims 1-4~~, claim 1,



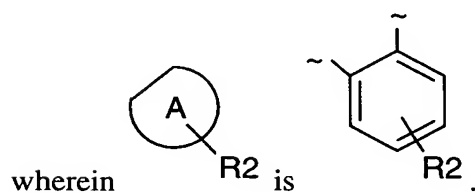


Claim 6 (original): The compound of claim 5, wherein





Claim 7 (currently amended): The compound of ~~any one of claims 1-6~~, claim 1,



wherein

Claim 8 (original): The compound of claim 7, wherein:

Alk is (C_{1-4}) alkylene;

X is oxygen;

R^1 is hydrogen or (C_{1-6}) alkyl;

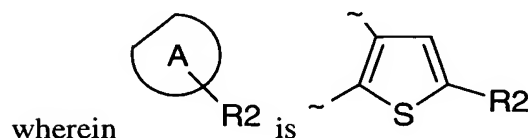
R^2 is hydrogen, (C_{1-6}) alkyl, (C_{1-6}) fluoroalkyl, (C_{3-6}) cycloalkyl, or halogen;

R^3 is hydrogen or (C_{1-4}) alkyl; and

Z^1 and Z^2 are independently selected from hydrogen and halogen.

Claim 9-11 (cancelled)

Claim 12 (currently amended): The compound of ~~any one of claims 1-6~~, claim 1,



Claim 13 (original): The compound of claim 12, wherein:

Alk is (C₁₋₄) alkylene;

R¹ is hydrogen or (C₁₋₄) alkyl;

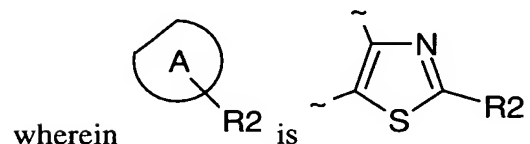
R² is H, (C₁₋₆) alkyl, halogen, or (C₁₋₆) fluoroalkyl;

R³ is hydrogen, (C₁₋₄) alkyl, (C₂₋₆) alkenyl, or phenyl, wherein (C₁₋₄) alkyl is unsubstituted or substituted with a phenyl group; and

Z¹ and Z² are independently selected from hydrogen and halogen.

Claims 14-20 (cancelled)

Claim 21 (currently amended): The compound of ~~any one of claims 1-6~~, claim 1,



Claim 22 (original): The compound of claim 21, wherein:

Alk is (C₁₋₄) alkylene;

X is oxygen;

R¹ is hydrogen, (C₁₋₆) fluoroalkyl, (C₃₋₆) cycloalkyl, or (C₁₋₄) alkyl, wherein the (C₁₋₄) alkyl is unsubstituted or substituted with a hydroxy, methoxy, ethoxy, or -OCH₂CH₂OH group;

R² is H, (C₁₋₆) fluoroalkyl, (C₃₋₆) cycloalkyl, -C(O)OR⁴, or (C₁₋₆) alkyl, wherein the (C₁₋₆) alkyl is unsubstituted or substituted with a hydroxyl group;

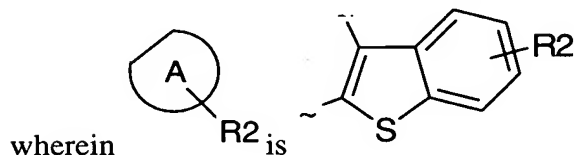
R³ is hydrogen or (C₁₋₄) alkyl;

R⁴ is hydrogen or (C₁₋₆) alkyl; and

Z^1 and Z^2 are hydrogen.

Claims 23-26 (cancelled)

Claim 27 (currently amended): The compound of ~~any one of claims 1-6~~, claim 1,



Claim 28 (original): The compound of claim 27, wherein:

Alk is (C₁₋₄) alkylene;

X is oxygen;

R^1 is hydrogen or (C₁₋₄) alkyl;

R^2 is H;

R^3 is (C₁₋₄) alkyl; and

Z^1 and Z^2 are independently selected from the group consisting of hydrogen, halogen and (C₁₋₆) fluoroalkyl.

Claim 29 (cancelled)

Claim 30 (currently amended): The compound of ~~any one of claims 1-29~~, claim 1, wherein the stereo configuration is "S" about the carbon of the piperazine group bound to Alk.

Claim 31 (original): The compound of claim 30, wherein Alk is (C₂₋₄) alkylene.

Claim 32 (currently amended): The compound of ~~any one of claims 1-29~~, claim 1, wherein the stereo configuration is "R" about the carbon of the piperazine group bound to Alk.

Claim 33 (original): The compound of claim 32, wherein Alk is methylene.

Claim 34 (currently amended): The compound of ~~any one of claims 1-8, 12, 13, 21, 22, 27 or 28, claim 1~~, wherein Alk is $-\text{CH}_2-$, $-\text{CH}_2\text{CH}_2-$, $-\text{CH}_2\text{CH}_2\text{CH}_2-$, $-\text{CH}_2\text{CH}(\text{CH}_3)-$ or $-\text{CH}_2\text{C}(\text{CH}_3)_2-$.

Claim 35 (original): The compound of claim 34, wherein Alk is $-\text{CH}_2\text{CH}_2\text{CH}_2-$.

Claim 36 (original): The compound of claim 34, wherein Alk is $-\text{CH}_2\text{CH}_2-$.

Claim 37 (currently amended): The compound of ~~any one of claims 1-8, 12, 13, 21, 22, 27 or 28, claim 1~~, wherein X is O.

Claim 38 (currently amended): The compound of ~~any one of claims 1-8, 12, 13, 21, 22, 27 or 28, claim 1~~, wherein R^1 is (C_{1-4}) alkyl.

Claim 39 (original): The compound of claim 38, wherein R^1 is methyl.

Claim 40 (currently amended): The compound of ~~any one of claims 1-8, 12, 13, 21, 22, 27 or 28, claim 1~~, wherein R^2 is (C_{1-6}) alkyl or (C_{1-6}) fluoroalkyl.

Claim 41 (original): The compound of claim 40, wherein the (C_{1-6}) fluoroalkyl is $-\text{CF}_3$.

Claim 42 (original): The compound of claim 40, wherein R^2 is (C_{1-4}) alkyl.

Claim 43 (original): The compound of claim 42, wherein the (C_{1-4}) alkyl is methyl.

Claim 44 (original): The compound of claim 42, wherein the (C_{1-4}) alkyl is isopropyl.

Claim 45 (currently amended): The compound of ~~any one of claims 1-8, 12, 13, 21, 22, 27 or 28, claim 1~~, wherein R^3 is (C_{1-4}) alkyl.

Claim 46 (original): The compound of claim 45, wherein R^3 is methyl or ethyl.

Claim 47 (original): The compound of claim 46, wherein R^3 is methyl.

Claim 48 (currently amended): The compound of ~~any one of claims 1-8, 12, 13, 21, 22, 27 or 28,~~ claim 1, wherein Z¹ and Z² are independently selected from hydrogen and halogen.

Claim 49 (original): The compound of claim 48, wherein at least one of Z¹ and Z² is halogen.

Claim 50 (original): The compound claim 49, wherein the halogen is fluorine.

Claim 51 (currently amended): A pharmaceutical composition comprising an effective amount of a compound ~~according to any one of claims 1-50~~ of claim 1 in association with a pharmaceutically acceptable carrier, diluent or excipient.

Claim 52-60 (cancelled)

Claim 61 (currently amended): A method for treating a psychotic disorder, comprising administering to a mammal in need thereof an effective amount of a compound ~~according to any one of claims 1-50~~ of claim 1.

Claim 62 (original): The method of claim 61, wherein the psychotic disorder is schizophrenia.

Claim 63 (original): The method of claim 61, wherein the psychotic disorder is schizophreniform.

Claim 64 (original): The method of claim 61, wherein the psychotic disorder is schizoaffective disorder.

Claims 65-72 (cancelled)

Claim 73 (currently amended): A method for treating a mood disorder, comprising administering to a mammal in need thereof an effective amount of a compound ~~according to any one of claims 1-50~~ of claim 1.

Claim 74 (original): The method of claim 73, wherein the mood disorder is a bipolar disorder.

Claim 75 (original): The method of claim 74, wherein the bipolar disorder is acute mania.

Claim 76 (original): The method of claim 74, wherein the bipolar disorder is bipolar depression.

Claims 77-84 (cancelled)